

first juxtaposed upper portion on a first one of the floorboards and a second juxtaposed upper portion on a second one of the floorboards.

27. (New) The locking system as claimed in claim 1, wherein at least a portion of the lower cooperating abutment surface is between the outer vertical plane and a vertical joint plane defined by a contacting portion of two juxtaposed upper portions of the floorboards, a first juxtaposed upper portion on a first one of the floorboards and a second juxtaposed upper portion on a second one of the floorboards.

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28. (New) A locking system for mechanical joining of floorboards, the locking system comprising:

a tongue-and-groove joint, the groove and tongue of which have cooperating upper abutment surfaces and cooperating lower abutment surfaces for vertical locking of two joint edges of two adjacent floorboards, wherein the upper abutment surfaces extend in a first plane essentially parallel to a principal plane of the floorboards and the lower abutment surfaces extend in a second plane essentially parallel to the principal plane of the floorboards;

a locking groove formed in an underside of a first one of the floorboards and extended in parallel therewith and spaced from the joint edge; and

a portion projecting from a second one of the floorboards, the portion supporting, at a distance from the joint edge, a locking element cooperating with the locking groove,

wherein the locking groove and the locking element are for horizontal mechanical joining of the joint edges perpendicular to the joint edges,

wherein both the tongue is anglable into the groove and the locking element is insertable into the locking groove by mutual angular motion of the floorboards about upper portions of the joint edges, and

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wherein in a joined state the cooperating upper abutment surfaces are in contact with each other and the cooperating upper abutment surfaces extend in a contacting state beginning at a first position in the groove at an inner vertical plane and ending at a second position in the groove at an outer vertical plane, wherein the outer vertical plane is closer to the joint edge than the inner vertical plane, and the tongue-and-groove joint includes a space in the groove between the inner vertical plane and the outer vertical plane and below the tongue, the space extending from the inner vertical plane to at least halfway to the outer vertical plane, an uppermost surface of the locking element is below the first plane, and at least a portion of the lower abutment surfaces are positioned between the outer vertical plane and the joint edge.

29. (New) The locking system of claim 28, wherein in an angling state and during a final phase of an inwards angling when the locking element is inserted into the locking groove, the tongue-and-groove joint includes a space in the groove between the inner and the outer vertical plane and below the tongue.

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30. (New) The locking system of claim 28, wherein in the joined state, the cooperating lower abutment surfaces are in contact with each other.

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